

# Amos Hason

📍 Israel ✉ amos@hason.science 🔗 amos.hason.science 🌐 amos-hason 📱 AmosHason

## About Me

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Independent and self-disciplined researcher with proven self-learning abilities. Curious, ambitious, and passionate about artificial intelligence research and development. Quickly adapts to new development environments, platforms, technologies, and methodologies.

Available for full-time onsite and hybrid work. Willing to relocate.

## Experience

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### Research Assistant

*Ben-Gurion University of the Negev*

*Be'er-Sheva, Israel*

*Mar 2023 – Dec 2024*

- **Research area:** Unsupervised sequential disentangled representation learning for **GenAI**.
- Worked with fellow lab members to develop a novel **YAML**-configurable multi-modal (video, audio, and time series) disentanglement benchmark framework.
  - Contributed to development of an end-to-end pipeline of dataset generation/loading, architecture interface, training, latent space exploration, and evaluation, using novel disentanglement metrics based on attribute swapping and **LLM**-as-a-judge among others.
  - Created a novel dataset of neurally synthesized melodies with varied features across instruments for music disentanglement tasks.
  - To appear at **NeurIPS 2025**.
- Developed a new variant of an existing autoencoder architecture.
  - Achieved absolute improvements of 3-16% over state-of-the-art results on video disentanglement metrics.
  - Achieved ~3 times more compressed latent space in comparison to the original architecture.
- Suggested a new standard for comprehensive reporting of training environment details to mitigate reproducibility issues.
- Primarily used **PyTorch** and **PyTorch Lightning**, but also used **TensorFlow**, **Hugging Face**, and **Scikit-learn** for specific research tasks.
- Trained models and designed and performed experiments, including analysis and visualization of the learned latent space for model explainability and experiments in the audio domain with **TorchAudio**, **DDSP**, **Stable Audio**, and audio representations such as **mel spectrogram**, over a **Slurm HPC** cluster.
- Tracked training data and experiment results through **Neptune's MLOps** platform.

### Teaching Assistant

*Ben-Gurion University of the Negev*

*Be'er-Sheva, Israel*

*Mar 2022 – Mar 2024*

- Provided teaching assistance for undergraduate courses in mathematical applications of computer science, algorithm design, and programming with **Python** (including **SciPy**, **NumPy**, **Pandas**, and **Matplotlib**).

### Software Engineer

*Varonis*

*Herzliya, Israel*

*Oct 2020 – June 2021*

- Designed and developed **C# (.NET Framework)** and **Python** backend components for productizing data security insight generation features based on user profiling and peering models developed using **Pandas**.
- Worked in tandem with data scientists to ensure correctness of delivery.

### Software Engineer

*Fabric*

*Tel Aviv, Israel*

*Feb 2018 – Oct 2020*

- Designed and developed infrastructure and integration software tools using **C#** with **ASP.NET (.NET Core)** and **Python** on **Linux** in a distributed multidisciplinary robotics environment.
- Initiated software projects from scratch as well as contributed to existing software projects.

- Participated in the entire software development life cycle via **CI/CD**: planning, prioritizing, design, development, testing, integration, and release.
- Deployed services using **Docker**, implemented message queuing with **RabbitMQ**, managed data storage on **AWS**, monitored systems through **Elasticsearch**, and performed data analysis using **F#**.

### Quality Assurance Engineer

Check Point Software Technologies

Tel Aviv, Israel

Mar 2013 – Nov 2014

- Conducted performance testing of network security solutions.

## Education

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### Ben-Gurion University of the Negev

M.Sc. in Computer Science

Mar 2022 – Dec 2024

- **Focus:** Intelligent and autonomous systems.
- **Skills:** Deep learning (**PyTorch**), representation learning, deep generative models, generative artificial intelligence, time series models, applied mathematics, signal processing, signal estimation, dynamical systems, computer vision, music information retrieval, sound design, extended reality (**Unity**), post-quantum cryptography, formal verification, parameterized complexity.
- **GPA:** 90/100.
- Volunteered extracurricularly during wartime: (1) contributed to research and development of an operational aerial threat (e.g., combat drones) detection solution using deep learning of audio features, and (2) contributed to development (mainly soundtrack composition) of a video game dedicated to the relaxation of children.

### The Open University of Israel

B.Sc. in Sciences: Emphasis on Computer Science

Mar 2015 – May 2017

- **Skills:** Artificial intelligence, computational intelligence, computational creativity, data mining, machine learning, artificial neural networks, evolutionary computation, theory of computation, data structures, algorithm design, system programming (**C**), object-oriented programming (**Java**), functional programming (**Lisp**), programming language theory, database systems (**PostgreSQL**), physics, chemistry, meteorology, philosophy of science.
- **GPA:** 88/100 (**Honors Graduate**), **top 20%**.

## Publications

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### Disentanglement Beyond Static vs. Dynamic: A Benchmark and Evaluation Framework for Multi-Factor Sequential Representations

Forthcoming

Tal Barami, Nimrod Berman, Ilan Naiman, Amos Haviv Hason, Rotem Ezra, Omri Azencot  
NeurIPS 2025